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(FILE 'USPAT' ENTERED AT 12:38:21 ON 15 MAY 96)

L1 457 S HEMOGLOBIN/AB  
L2 62 S L1 AND ULTRAFILTRATION  
L3 2 S L2 AND FRACTIONAL PRECIPITATION  
L4 2 S L3 AND CHROMATOGRAPHY  
L5 15 S L1 AND 500000  
L6 16 S L1 AND 1000000  
L7 11 S L6 AND ULTRAFILTRATION

=> d 1-

1. 5,438,041, Aug. 1, 1995, Oxygen carrying multiple emulsions; Shuming Zheng, et al., 514/6; 252/309, 312, 314; 514/832, 833, 938, 939, 941

[IMAGE AVAILABLE]

2. 5,296,465, Mar. 22, 1994, Ultra pure hemoglobin solutions and blood-substitutes; Carl W. Rausch, et al., 514/6; 530/385 [IMAGE AVAILABLE]

3. 5,217,648, Jun. 8, 1993, Process for preparation of hemoglobin multiple emulsions; Richard L. Beissinger, et al., 252/314, 312; 514/6, 832, 833, 938, 939, 941 [IMAGE AVAILABLE]

4. 5,110,909, May 5, 1992, Macromolecular conjugates of hemoglobin, a procedure for their preparation and their uses; Edith Dellacherie, et al., 530/385; 525/54.1 [IMAGE AVAILABLE]

5. 5,084,558, Jan. 28, 1992, Extra pure semi-synthetic blood substitute; Carl W. Rausch, et al., 530/385, 380, 384, 395, 413, 414, 415, 416, 417, 419 [IMAGE AVAILABLE]

6. 5,079,337, Jan. 7, 1992, Macromolecular conjugates of hemoglobin, a procedure for their preparation and their uses; Michele Leonard, et al., 530/385; 525/54.1 [IMAGE AVAILABLE]

7. 5,061,688, Oct. 29, 1991, Hemoglobin multiple emulsion; Richard L. Beissinger, et al., 514/6; 252/312, 314; 514/832, 833, 938, 939, 941 [IMAGE AVAILABLE]

8. 4,920,194, Apr. 24, 1990, Blood substitute; Wolfgang Feller, et al., 530/385; 514/6, 832 [IMAGE AVAILABLE]

9. 4,780,210, Oct. 25, 1988, Tangential flow affinity \*\*ultrafiltration\*\*; Jen-Chang Hsia, 210/638, 639 [IMAGE AVAILABLE]

10. 4,698,387, Oct. 6, 1987, Allosteric conjugates of hemoglobin and use as blood substitutes; Karl-Heinz Schmidt, et al., 525/54.1; 514/2, 6, 7,

8, 54, 59, 60; 530/350, 402, 813, 816 [IMAGE AVAILABLE]

11. 4,529,719, Jul. 16, 1985, Modified crosslinked stroma-free  
tetrameric hemoglobin; Ross W. Tye, 514/6; 530/385 [IMAGE AVAILABLE]

=

=> s 110 and (acetone or ethanol or ammonium sulfate)

109483 ACETONE

134457 ETHANOL

143779 AMMONIUM

131502 SULFATE

14278 AMMONIUM SULFATE

(AMMONIUM(W) SULFATE)

L15 28 L10 AND (ACETONE OR ETHANOL OR AMMONIUM SULFATE)

=> d 1-

1. 5,512,485, Apr. 30, 1996, Hematology control composition including leukocyte analogs; and methods for their preparation and use; Carole Young, et al., 436/10, 11, 15, 16, 17, 18 [IMAGE AVAILABLE]

2. 5,512,268, Apr. 30, 1996, Polymeric shells for medical imaging prepared from synthetic polymers, and methods for the use thereof; Mark W. Grinstaff, et al., 424/9.322, 9.42, 9.5, 9.52; 436/173 [IMAGE AVAILABLE]

3. 5,508,021, Apr. 16, 1996, Non-fluorinated polymeric shells for medical imaging; Mark W. Grinstaff, et al., 424/9.322, 9.42, 9.5; 436/173 [IMAGE AVAILABLE]

4. 5,505,932, Apr. 9, 1996, Method for the preparation of fluorocarbon-containing polymeric shells for medical imaging; Mark W. Grinstaff, et al., 424/9.3, 9.322, 9.34, 9.37, 9.5, 9.52; 436/173 [IMAGE AVAILABLE]

5. 5,498,421, Mar. 12, 1996, Composition useful for in vivo delivery of biologics and methods employing same; Mark W. Grinstaff, et al., 424/450, 9.3, 9.34, 9.37, 9.4, 9.5, 451, 455 [IMAGE AVAILABLE]

6. 5,439,882, Aug. 8, 1995, Blood substitute; Mario Feola, et al., 514/6, 832; 530/385, 829 [IMAGE AVAILABLE]

7. 5,437,993, Aug. 1, 1995, Preparation of \*\*cross\*\*--\*\*linked\*\* glucose isomerase crystals; Kalevi Visuri, 435/234, 94, 174 [IMAGE AVAILABLE]

8. 5,387,672, Feb. 7, 1995, Hemoglobin intramolecularly \*\*cross\*\*--\*\*linked\*\* with long chain divalent reagents; Enrico Bucci, et al., 530/385, 402, 410 [IMAGE AVAILABLE]

9. 5,362,855, Nov. 8, 1994, Imidoester \*\*cross\*\*--\*\*linked\*\* hemoglobin compositions; Robert L. Garlick, et al., 530/385 [IMAGE AVAILABLE]

10. 5,320,964, Jun. 14, 1994, Hematology control composition including leukocyte analogs; and methods for their preparation and use; Carole

Young, et al., 436/10, 11, 15, 16, 17, 18 [IMAGE AVAILABLE]

11. 5,308,620, May 3, 1994, Protein nanomatrixes and method of production; Richard C. K. Yen, 424/484; 252/315.1; 424/486, 489, 499 [IMAGE AVAILABLE]

12. 5,296,465, Mar. 22, 1994, Ultra pure hemoglobin solutions and blood-substitutes; Carl W. Rausch, et al., 514/6; 530/385 [IMAGE AVAILABLE]

13. 5,295,944, Mar. 22, 1994, Method for treating a tumor with ionizing radiation; Beverly A. Teicher, et al., 600/1; 128/898 [IMAGE AVAILABLE]

14. 5,290,919, Mar. 1, 1994, Hemoglobin intramolecularly \*\*cross\*\*\*\*linked\*\* with trivalent reagents; Enrico Bucci, et al., 530/385, 402, 410 [IMAGE AVAILABLE]

15. 5,250,665, Oct. 5, 1993, Specifically .beta.-.beta. \*\*cross\*\*\*\*linked\*\* hemoglobins and method of preparation; Ronald Kluger, et al., 530/385, 402, 410 [IMAGE AVAILABLE]

16. 5,084,558, Jan. 28, 1992, Extra pure semi-synthetic blood substitute; Carl W. Rausch, et al., 530/385, 380, 384, 395, 413, 414, 415, 416, 417, 419 [IMAGE AVAILABLE]

17. 5,069,936, Dec. 3, 1991, Manufacturing protein microspheres; Richard C. K. Yen, 427/213.33; 264/4.1, 4.3; 424/1.25, 1.33, 484, 491; 428/402.2, 402.24; 514/6, 885, 965; 935/54 [IMAGE AVAILABLE]

18. 4,431,428, Feb. 14, 1984, Bio-artificial organ using microencapsulated enzymes; Gottfried Schmer, 604/890.1; 424/484, 489 [IMAGE AVAILABLE]

19. 4,369,226, Jan. 18, 1983, Polyglutaraldehyde synthesis and protein bonding substrates; Alan Rembaum, 428/334; 424/497; 428/406, 407, 524; 436/526, 531 [IMAGE AVAILABLE]

20. 4,328,203, May 4, 1982, Microbial insecticide; Kemet D. Spence, et al., 424/493, 93.461, 93.47, 93.48, 93.6; 514/972 [IMAGE AVAILABLE]

21. 4,325,937, Apr. 20, 1982, Microbial insecticide; Kemet D. Spence, et al., 424/493, 93.461, 93.47, 93.48, 93.6; 514/972 [IMAGE AVAILABLE]

22. 4,267,234, May 12, 1981, Polyglutaraldehyde synthesis and protein bonding substrates; Alan Rembaum, 428/403; 252/62.54; 424/497; 427/127; 428/406, 407, 524, 900, 913; 436/526, 531, 800; 525/54.1; 528/263, 270 [IMAGE AVAILABLE]

23. 4,265,880, May 5, 1981, Microbial insecticide; Kemet D. Spence, et al., 424/93.4, 93.461, 93.47, 93.48, 93.5, 93.6 [IMAGE AVAILABLE]

24. 4,223,007, Sep. 16, 1980, Microbial insecticide; Kemet D. Spence, et al., 424/418, 93.461, 93.47, 93.48, 93.6; 514/773, 972 [IMAGE AVAILABLE]

25. 4,061,736, Dec. 6, 1977, Pharmaceutically acceptable intramolecularly \*\*cross\*\*--\*\*linked\*\*, stromal-free hemoglobin; Kent C. Morris, et al., 514/6; 435/1.2; 527/201, 204; 530/385 [IMAGE AVAILABLE]

26. 4,053,590, Oct. 11, 1977, Compositions of matter comprising macromolecular hemoglobin; Pieter Bonsen, et al., 514/6; 527/201, 204, 205; 530/385 [IMAGE AVAILABLE]

27. 4,001,401, Jan. 4, 1977, Blood substitute and blood plasma expander comprising polyhemoglobin; Pieter Bonsen, et al., 514/6; 530/385 [IMAGE AVAILABLE]

28. 4,001,200, Jan. 4, 1977, Novel polymerized, \*\*cross\*\*--\*\*linked\*\*, stromal-free hemoglobin; Pieter Bonsen, et al., 530/385; 436/15 [IMAGE AVAILABLE]

hemo.trn .

INDEX 'AIDSLINE, ANABSTR, AQUASCI, BIOBUSINESS, BIOSIS, BIOTECHABS, BIOTECHDS,  
CABA, CANCERLIT, CAPLUS, CEABA, CEN, CIN, CJACS, CJELSEVIER, CONFSCI,  
CROPB, CROPU, DDFB, DDFU, DGENE, DISSABS, DRUGB, DRUGLAUNCH, DRUGNL,  
DRUGU, EMBAL, EMBASE, FSTA, GENBANK, ...' ENTERED AT 13:30:05 ON 13 MAY 9

45 FILES IN THE FILE LIST IN STNINDEX

Enter SET DETAIL ON to see search term postings or to view  
search error messages that display as 0\* with SET DETAIL OFF.

=> s hyperpolymeric and hemoglobin?

2 FILE BIOSIS  
3 FILE CAPLUS  
2 FILE EMBASE  
2 FILE MEDLINE  
1 FILE SCISEARCH  
2 FILE TOXLIT

6 FILES HAVE ONE OR MORE ANSWERS, 45 FILES SEARCHED IN STNINDEX

L1 QUE HYPERPOLYMERIC AND HEMOGLOBIN?

=> file caplus,biosis,embase

=> s l1

L2 3 FILE CAPLUS  
L3 2 FILE BIOSIS  
L4 2 FILE EMBASE

TOTAL FOR ALL FILES

L5 7 L1

=> dup rem 15

PROCESSING COMPLETED FOR L5

L6 4 DUP REM L5 (3 DUPLICATES REMOVED)

=> d all 1-

L6 ANSWER 1 OF 4 CAPLUS COPYRIGHT 1996 ACS

AN 1996:230096 CAPLUS

TI Crosslinked globular proteins as a new class of semisynthetic  
macromolecules: characterization of the structure in solution of  
\*\*\*hyperpolymeric\*\*\* \*\*\*hemoglobin\*\*\* and myoglobin by means  
of size-exclusion chromatography, viscometry, osmometry and light  
scattering

AU Poetzschke, Harald; Barnikol, Wolfgang K. R.; Kirste, Rudolf G.;  
Rosenbaum, Markus

CS Inst. Physiol. Pathophysiol., Johannes Gutenberg-Univ., Mainz,  
D-55099, Germany

SO Macromol. Chem. Phys. (1996), 197(4), 1419-37  
CODEN: MCHPES; ISSN: 1022-1352

tolerated by anesthetized rats in acute blood exchange expts. Hyperpolymer produced from deoxygenated human Hb with divinyl sulfone as a crosslinker take part in tissue supply of O<sub>2</sub> to a substantial degree without and with increased inspiratory O<sub>2</sub> fraction, demonstrating the principal ability of hyperpolymers to transport O<sub>2</sub> in blood and to deliver it to tissues.

ST divinyl sulfone crosslinked polymer Hb

IT Blood substitutes and Plasma expanders

Crosslinking agents

(divinyl sulfone crosslinked \*\*\*hyperpolymeric\*\*\* human Hb as an artificial oxygen carrier)

IT \*\*\*Hemoglobins\*\*\*

RL: SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(polymers; divinyl sulfone crosslinked \*\*\*hyperpolymeric\*\*\* human Hb as an artificial oxygen carrier)

IT 77-77-0, Divinyl sulfone

RL: CAT (Catalyst use); THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(divinyl sulfone crosslinked \*\*\*hyperpolymeric\*\*\* human Hb as an artificial oxygen carrier)

L6 ANSWER 3 OF 4 CAPLUS COPYRIGHT 1996 ACS

DUPLICATE 2

AN 1993:260762 CAPLUS

DN 118:260762

TI A new type of artificial oxygen carrier: soluble \*\*\*hyperpolymeric\*\*\* \*\*\*hemoglobin\*\*\* with negligible oncotic pressure - production of thermally stable hyperpolymers from human blood with glutaraldehyde as cross-linker

AU Poetzschke, H.; Barnikol, W. K. R.

CS Inst. Physiol. Pathophysiol., Johannes Gutenberg-Univ. Mainz, Mainz, D-6500, Germany

SO Biomater., Artif. Cells, Immobilization Biotechnol. (1992), 20(2-4), 287-91

CODEN: BACBEU; ISSN: 1055-7172

DT Journal

LA English

CC 63-3 (Pharmaceuticals)

AB Hyperpolymers from human Hb were prepd. by redn. of Schiff bases, formed from glutaraldehyde and Hb, with NaCNBH<sub>3</sub>. These stabilized Hb polymers showed no changes in mol. wt. distribution, consequently the polymn. index remained the same during incubation up to 10 h.

ST Hb hyperpolymer blood substitute; glutaraldehyde Hb hyperpolymer

IT Blood substitutes and Plasma expanders

(Hb hyperpolymers, prepn. of stable, glutaraldehyde in)

IT \*\*\*Hemoglobins\*\*\*

RL: SPN (Synthetic preparation); PREP (Preparation)

(reaction products, with glutaraldehyde, polymers, crosslinked, prepn. of stable, for blood substitutes)

IT 111-30-8D, Glutaraldehyde, reaction products with Hb, polymers, reduced

RL: BIOL (Biological study)

(crosslinked, prepn. of stable, for blood substitutes)

L6 ANSWER 4 OF 4 BIOSIS COPYRIGHT 1996 BIOSIS  
AN 92:109616 BIOSIS  
DN BR42:49616  
TI A NEW TYPE OF ARTIFICIAL OXYGEN CARRIER SOLUBLE  
      \*\*\*HYPERPOLYMERIC\*\*\* HAEMOGLOBIN WITH NEGLIGIBLE ONCOTIC PRESSURE  
PRODUCTION OF STABLE HYPERPOLYMERS FROM HUMAN BLOOD WITH  
GLUTARALDEHYDE AS CROSS-LINKER.  
AU POETZSCHKE H; BARNIKOL W K R  
CS INST. PHYSIOLOGIE PATHOPHYSIOLOGIE, JOHANNES GUTENBERG-UNIV. MAINZ,  
SAARSTR. 21, D-6500 MAINZ, FRG.  
SO VIII WORLD CONGRESS OF THE INTERNATIONAL SOCIETY FOR ARTIFICIAL  
ORGANS AND THE IV INTERNATIONAL SYMPOSIUM ON BLOOD SUBSTITUTES,  
MONTREAL, QUEBEC, CANADA, AUGUST 19-23, 1991. BIOMATER ARTIF CELLS  
IMMOBILIZATION BIOTECHNOL 19 (2). 1991. 465. CODEN: BACBEU ISSN:  
1055-7172  
DT Conference  
LA English  
ST ABSTRACT \*\*\*HEMOGLOBIN\*\*\* REPLENISHING AGENT-DRUG  
HEMATOLOGIC-DRUG BLOOD SUBSTITUTE  
RN 111-30-8 (GLUTARALDEHYDE)  
7782-44-7 (OXYGEN)  
CC General Biology-Symposia, Transactions and Proceedings of  
Conferences, Congresses, Review Annuals 00520  
Comparative Biochemistry, General 10010  
Biochemistry-Gases \*10012  
Biochemical Studies-Proteins, Peptides and Amino Acids \*10064  
Biochemical Studies-Porphyrins and Bile Pigments \*10065  
Biophysics-Molecular Properties and Macromolecules \*10506  
Biophysics-Bioengineering \*10511  
Pathology, General and Miscellaneous-Therapy \*12512  
Metabolism-Energy and Respiratory Metabolism \*13003  
Blood, Blood-Forming Organs and Body Fluids-General; Methods \*15001  
Pharmacology-Blood and Hematopoietic Agents \*22008  
BC Hominidae 86215

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